

VERSION TO SHOW MARKED CHANGES TO CLAIMS

1. A composition for the removal of at least one undesired electrolyte and/or metabolite in a patient, which comprises a genetically engineered *E. coli DH5* cells microencapsulated in artificial cells to be capable of removing said undesired electrolyte and/or metabolite, wherein said undesired electrolyte is selected from the group consisting of K, Mg, P, Na, Cl and said undesired metabolite is selected from the group consisting of uric acid, cholesterol, bilirubin, and creatinine, wherein said removal of undesired electrolyte and/or metabolite lowers the undesired chemical concentration to a therapeutically acceptable level.
2. The composition of claim 1, wherein said *E. coli DH5* cell is microencapsulated using any microcapsule material which can retain the *E. coli DH5* cells and allows the undesired electrolyte and/or metabolite for removal to enter the microcapsules.
3. The composition of claim 1, wherein said *E. coli DH5* cells are entrapped within a carrier using any entrapment material which can retain the cells and allows the undesired electrolyte and/or metabolite for removal to enter in contact with the entrapped cells.
4. The composition of claim 2, wherein said *E. coli DH5* cells are microencapsulated using any material selected from the group consisting of nylon, silicon rubber, nylon-polyethylenimine, polylactic acid, polyglycolic acid, chitosan-alginate, cellulosesulphate-poly (dimethyldiallyl)-ammonium chloride, hydroxyethyl methacrylate-methyl methacrylate, chitosan carboxymethyl-cellulose and alginate-polylysinealginate.
5. The composition of claim 1, wherein said genetically engineered *E. coli DH5* cells are metabolically induced by fermentation induction.
6. [AMENDED] A method of the treatment of a disease with elevated level of undesired electrolytes and/or metabolites in the body of a patient, which comprises treating said patient with a composition [according to claim 1] for the removal of at least one undesired electrolyte and/or metabolite[.], wherein the composition comprises a genetically engineered *E. coli DH5* cells microencapsulated in artificial cells to be capable of removing said undesired electrolyte and/or metabolite.

7. The method of treatment of claim 6, wherein said disease is a kidney failure-causing disease.
8. The method of treatment of claim 6, wherein said disease is a liver failure-causing disease.
9. The method of treatment of claim 6, wherein said disease is a hyperammonemia with elevated ammonia level.
10. [AMENDED] The [use of a composition comprising genetically engineered *E. coli DH5* cells microencapsulated in artificial cells for the removal of at least one undesired electrolyte and/or metabolite in a patient] method of claim 6, wherein said undesired electrolyte is selected from the group consisting of K, Mg, P, Na, Cl and said undesired metabolite is selected from the group consisting of uric acid, cholesterol, bilirubin, and creatinine, wherein said removal of undesired electrolyte and/or metabolite lowers the undesired chemical concentration to a therapeutically acceptable level.
11. [AMENDED] The [use] method of claim [10] 6, wherein said *E. coli DH5* cell is microencapsulated using [any] a microcapsule material which can retain the *E. coli DH5* cells and allows the undesired electrolyte and/or metabolite for removal to enter the microcapsules.
12. [AMENDED] The [use] method of claim [10] 6, wherein said *E. coli DH5* cells are entrapped within a carrier using [any] an entrapment material which can retain the cells and allows the undesired electrolyte and/or metabolite for removal to enter in contact with the entrapped cells.
13. [AMENDED] The [use] method of claim 11, wherein said *E. coli DH5* cells are microencapsulated using [any] a material selected from the group consisting of nylon, silicon rubber, nylon-polyethylenimine, polylactic acid, polyglycolic acid, chitosan-alginate, cellulosesulphate-poly (dimethyldiallyl)-ammonium chloride, hydroxyethyl methacrylate-methyl methacrylate, chitosan carboxymethyl-cellulose and alginate-polylysinealginate.
14. [AMENDED] [The use of artificial cells] A method for the *in vitro* removal of at least one undesired electrolyte and/or metabolite in the body of a patient, [which comprises]

the method comprising contacting plasma of the patient with genetically engineered *E. coli DH5* cells microencapsulated to be capable of removing said undesired electrolyte is selected from the group consisting of K, Mg, P, Na, Cl and said undesired metabolite is selected from the group consisting of uric acid, cholesterol, bilirubin, and creatinine, wherein said removal of undesired electrolyte and/or metabolite lowers the undesired chemical concentration to a therapeutically acceptable level.

15. Artificial cells for the *in vitro* removal of at least one undesired electrolyte and/or metabolite in plasma of a patient, which comprises metabolically induced genetically engineered *E. coli DH5* cells microencapsulated to be capable of removing said undesired electrolyte and/or metabolite, wherein said undesired electrolyte is selected from the group consisting of K, Mg, P, Na, Cl and said undesired metabolite is selected from the group consisting of uric acid, cholesterol, bilirubin, and creatinine, wherein said removal of undesired electrolyte and/or metabolite lowers the undesired chemical concentration to a therapeutically acceptable level.
16. The artificial cells of claim 15, wherein said genetically engineered *E. coli DH5* cells are induced by fermentation induction.